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ABSTRACT

This study was conducted to compare upper elementary school children's attitudes toward physical activity, by grade level and gender across six attitude scale subdomains in order to assist physical education teachers in planning programs designed to foster positive attitudes toward physical activity. Subjects (N=429) were 243 girls and 186 boys in grades 3 though 6, from 11 elementary schools and 35 classrooms. The Children's Attitude Toward Physical Activity (CAPTA) inventory was utilized to assess attitudes across six subdomains: (1) social; (2) health and fitness; (3) vertigo; (4) aesthetic; (5) catharsis; and (6) ascetic. Findings indicate that: upper elementary school children's attitudes toward physical activity are best described by interaction of gender and specific attitude subdomains; androgynous programming in elementary physical education reduces gender differences, thereby expanding opportunities for both genders; and younger children's attitudes toward physical activity can be shaped more positively through androgynous socialization into physical activity. A list of references, an analysis of variance summary table, and four figures complete the document. (LL)

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A Comparison of Upper Elementary School Children's Attitudes Toward Physical Activity

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Abstract

The purpose of this study was to compare upper elementary school children's attitudes toward physical activity by grade level and gender across six attitude scale subdomains. Subjects were 429 children (n = 243 girls, n = 186 boys) in the third through sixth grades, with ages ranging from 8.3 to 13.2 years (M = 10.5, $SD \pm$ 1.1). Subjects from 11 schools and 35 classrooms participated in the study. The Children's Attitude Toward Physical Activity (CATPA) inventory was utilized to assess attitudes across six subdomains: (a) Social, (b) Health and Fitness, (c) Vertigo, (d) Aesthetic, (e) Catharsis, and (f) Ascetic. A 4 x 2 x 6 (grade level x gender x subdomain) factorial analysis of variance with repeated measures on the last factor, with subdomain scores as the dependent variable, was performed on data at the .05 level. Results indicated significant main effects on the three factors and a significant interaction of gender x subdomain scores ($p < .05$). A Fisher's least significant difference test indicated that girls displayed significantly more positive attitudes than did boys in Social, Health and Fitness, and Aesthetic subdomains, whereas boys displayed significantly more positive attitudes than did girls in the Vertigo subdomain.

A Comparison of Upper Elementary School Children's Attitudes Toward Physical Activity

Lacy and Hastad (1989) have recommended assessing elementary and junior high students' attitudes toward physical activity using Simon and Smoll's (1974) Children's Attitude Toward Physical Activity (CATPA) inventory as part of physical education evaluation procedures. Information obtained from such assessment is of value to physical education teachers to assist them in planning programs designed to foster positive attitudes toward physical activity.

Simon and Smoll (1974) developed the CATPA for children in the fourth through sixth grades because there was a paucity of knowledge regarding children's attitudes toward physical activity; language of the instrument is that of third grade reading level. The CATPA inventory measures the following attitudinal subdomains: (a) Social, (b) Health and Fitness, (c) Vertigo, (d) Aesthetic, (e) Catharsis, and (f) Ascetic.

Research utilizing the CATPA with elementary and junior high school–age subjects has compared groups by gender, grade level, type of fitness programming, and type of sport participation. In a multiple–longitudinal study with two groups of fourth through sixth grade elementary school children, each over three years of time ($N = 114$), Smoll and Schutz (1980) reported significant differences between genders. Female children held more positive attitudes than did male children in the Aesthetic subdomain whereas male children held more positive attitudes than did female children in the Vertigo and Cathartic subdomains. Wood, Ewers, Wolf, and Hewett's (1989) subjects were junior high students; the revised CATPA (Schutz, Smoll, Carre, & Mosher, 1985) was utilized. Female subjects displayed significantly higher attitudes toward physical activity on Social Growth and Aesthetic than did male subjects, and male subjects displayed significantly higher attitudes than did female subjects on the Vertigo and Ascetic subdomains. Using the revised CATPA instrument to measure fourth and fifth grade students' attitudes toward

physical activity, Patterson and Faucette (1990) reported significant differences between genders on two subdomains (girls higher on Aesthetic and boys higher on Vertigo).

In another study, Mott, Virgilio, Warren, and Berenson (1991) utilized fifth–grade children in two seven–week fitness enhancement programs, personalized and traditional. No comparisons were conducted between groups because they were not statistically the same on the pretest. ANOVAs were performed to determine differences between gain scores by group. The personalized group showed minimal mean gains in the Vertigo, Catharsis, and Ascetic subdomains whereas the traditional group demonstrated a minimal gain in the Aesthetic subdomain.

Using 550 elementary and junior high athletes participating in specific sports through camps or clubs, Schutz, Smoll, and Wood (1981) used the CATPA and a similar instrument that examined attitudes toward specific sports. Results indicated that male children and youth held high positive attitudes in the Social, Health and Fitness, and Catharsis subdomains but low attitudes in the Aesthetic subdomain. Female children held high positive attitudes in the Social, Health and Fitness, and Aesthetic subdomains and low attitudes in the Vertigo and Ascetic subdomains. There were no differences in attitudes between female and male children who participated in the sports of figure skating and swimming. The investigators concluded that differences in young athlete's attitudes toward physical activity might be due to sport–specific affective attributes.

Other studies have utilized correlational techniques to determine relationships between attitudes toward physical activity and other variables. With a sample of fourth through sixth grade elementary school children ($\underline{N} = 264$) from an elementary school in Washington state, Smoll, Schutz, and Keeney (1976) examined relationships of the CATPA to involvement (measured by a questionnaire) and proficiency in physical activities (50–yard dash, standing long jump, and softball throw for distance). Relationships of the CATPA and involvement domains were significant except for fourth–grade girls. However, almost all relationships of CATPA to performance domains were nonsignificant.

The purpose of this study was to compare upper elementary school children's

attitudes toward physical activity by grade level, gender, and across six attitude scale subdomains. It was hoped that information obtained would help elementary physical education teachers and teacher educators better understand when (grade level) girls and boys (gender) become less enthusiastic or begin to lose interest in physical activities (i.e., begin to demonstrate less positive attitudes). Experienced elementary physical education teachers have observed that there is a point in time when some upper elementary students become less enthusiastic than their baseline levels regarding physical education class. Is this loss of enthusiasm a function of grade level or gender, and in what attitudinal subdomains does it occur?

Method

Subjects

Subjects were 429 elementary school children with an age range of 8.3 to 13.2 years (M = 10.5, SD = $\pm$1.1). Subject breakdown by gender was 57% female children and 43% male children. Percentages of subjects from each grade level were: (a) third—28%, (b) fourth—28%, (c) fifth—27%, and (d) sixth—17%. The study was comprised of a total of ll schools and 38 classrooms, with a geographic representation of 61% who were from a medium–sized school district in a university community and 39% who were from a rural school district.

Instrumentation

Instrumentation utilized in the study was the Children's Attitude Toward Physical Activity inventory (CATPA) (Simon & Smoll, 1974). The CATPA was developed to measure attitudes in six subdomains:contains the following independent subdomains: (a) Social, (b) Health and Fitness, (c) Vertigo, (d) Aesthetic, (e) Catharsis, and (f) Ascetic. The CATPA is a semantic–differential scale which uses eight bipolar adjective pairs to describe multidimensional attitudes toward physical activity. The following pairs of adjectives accompany each of the six subdomains: (a) good–bad, (b) of no use–useful, (c) not pleasant–pleasant, (d) bitter–sweet, (e) nice–awful, (f) dirty–clean, and (g)

steady–nervous. Each adjective pair contains a 7–point range, and the scale is equally divided in direction of favorable and unfavorable responses. Respondents are instructed to think about each of the subdomains in terms of the pairs of antonyms. For each of subdomains, scores range from 8 to 56.

Procedures

All testing was conducted during the late spring over a two–year period. The principal investigator administered the CATPA to all subjects during their scheduled physical education class time. Administration time was 20 to 25 minutes.

Results

Statistical analyses of demographic and CATPA data were performed on an IBM 4381 mainframe computer with VM/CMS operating system and SAS statistical software (SAS Institute, Inc., 1985). Figure 1 displays total attitude scale means by grade level, and Figure 2 displays total attitude scale mean scores by grade level and gender. Descriptive statistics of CATPA subdomain scores, which include means, standard deviations, and ranges, are displayed in Figure 3.

Insert Figures 1, 2, and 3 and about here

A 4 x 2 x 6 (grade level x gender x attitude subdomain) factorial analysis of variance (ANOVA), with repeated measures on the last factor and subdomain scores as the dependent variable, was utilized for data analysis at the .05 significance level. The GLM procedure (Freund, Littell, & Spector, 1986) with a Type III analysis was used to analyze data. This procedure is recommended when interactions may be present in comparison of main effects (Freund, Littell, & Spector, 1986). Results of the ANOVA are presented in Table 1.

Insert Table 1 about here

Results yielded significant main effects on the three factors and a significant first–order interaction of gender x attitude subdomain. Because this interaction was significant, data were averaged across the four levels of the grade level factor, by gender and subdomain. The least–squares estimate was utilized because the procedure is recommended when cell frequencies are unequal (Freund, Littell, & Spector, 1986; Winer, 1971).

A Fisher's least significant difference follow–up test indicated where there were significant differences. Female children displayed more positive attitudes toward physical activity than male children in Social, Health and Fitness, and Aesthetic, whereas male children displayed more positive attitudes toward physical activity than female children in the Vertigo subdomain. Both groups displayed similar attitudes toward physical activity in Catharsis and Ascetic subdomains. A graphic representation of the adjusted means of attitude subdomain scores by gender is presented in Figure 4.

Insert Figure 4 about here

Conclusion, Implications, and Summary

Within the scope of this study, it is concluded that upper elementary school children's attitudes toward physical activity are best described by interaction of gender and specific attitude subdomains. These findings have implications for androgynous programming in elementary physical education to reduce gender differences, thereby expanding opportunities for both genders. Additionally, these findings have deeper implications for shaping younger children's attitudes positively through androgynous socialization into physical activity.

Results of this study were very similar to results of previously conducted research. With the exception of swimmers and skaters from Schutz, Smoll, & Wood's (1981) study with young athletes, female children and youth always demonstrated higher (and usually

statistically significant when compare) attitudes toward physical activity than did male children and youth in the Aesthetic subdomain. Male children and youth always demonstrated higher (and usually statistically significant when compared) attitudes toward physical activity than did female children in the Vertigo subdomain. The female children from this study and those from Schutz, Smoll, and Wood's (1981) study with children involved in youth sports demonstrated the same profile whereas the male children from this study and those from Patterson and Faucette's (1990) study demonstrated the same profile.

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Table 1

Analysis of Variance Summary Table

Source of Variation	df	SS	MS	F	p
Between–subjects					
Grade Level (GL)	3	4533	1511	4.07	.007 *
Gender (G)	1	1566	1566	4.22	.040 *
GL X G	3	2722	907	2.44	.060
Error between	421	156361	371		
Within–subjects					
Subdomain (S)	5	9058	1812	34.32	.0001 *
GL X S	15	774	52	0.98	.4760
G X S	5	7153	1431	27.10	.0001 *
GL X G X S	15	412	27	0.52	.9308
Error within	2103	111010	53		

* $p < .05$

Figure Caption

Figure 1. Attitude scale—total: means by grade level.

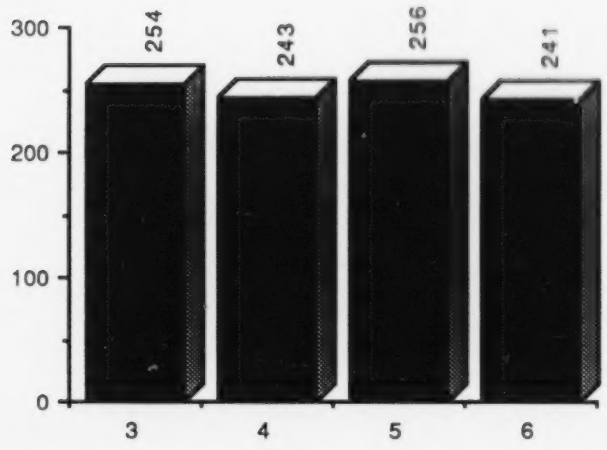

300
200
100
0
254
243
256
241
3
4
5
6

Figure Caption

Figure 2. Attitude scale—total: means by grade level and gender.

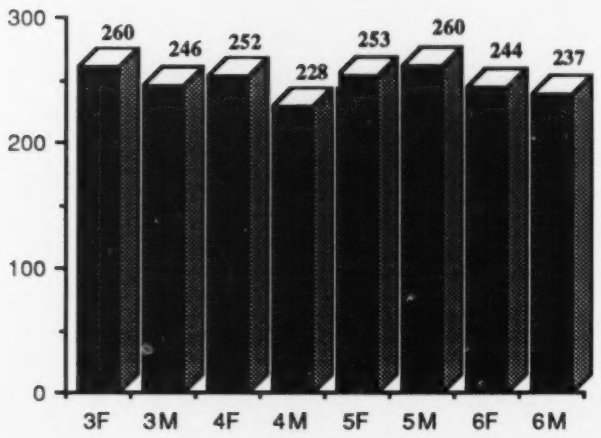
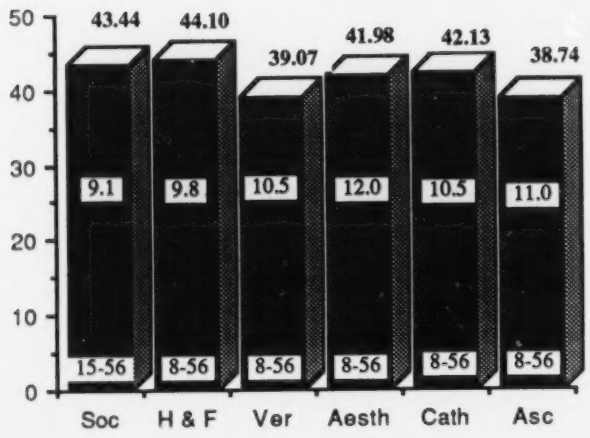

300
200
100
0
260
246
252
228
253
260
244
237
3F
3M
4F
4M
5F
5M
6F
6M

Figure Caption

Figure 3. Descriptive statistics: CATPA subdomain scores.


50
40
30
20
10
0
43.44
44.10
39.07
41.98
42.13
38.74
9.1
9.8
10.5
12.0
10.5
11.0
15-56
8-56
8-56
8-56
8-56
8-56
Soc
H & F
Ver
Aesth
Cath
Asc

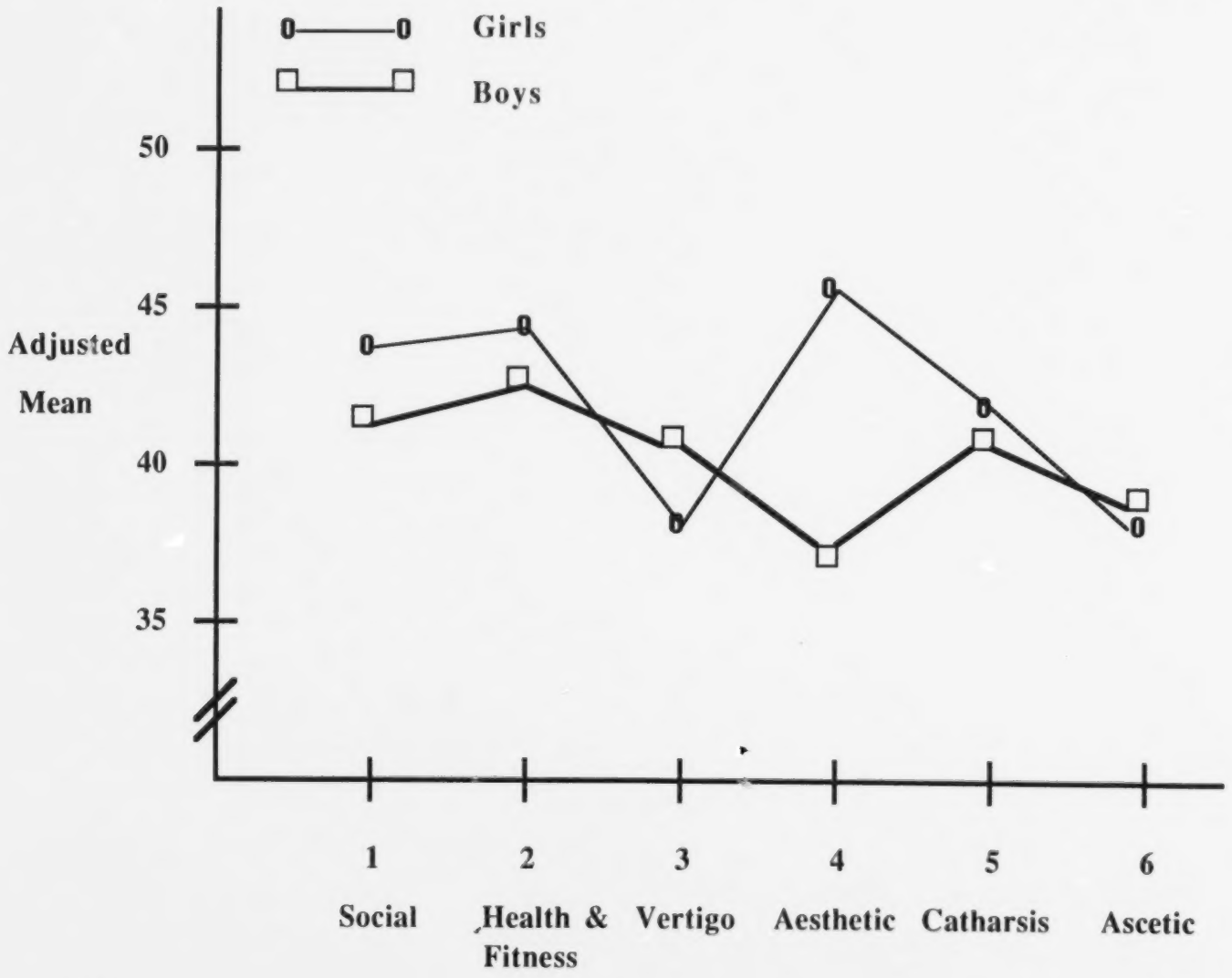

Girls
Boys
50
45
40
35
Adjusted
Mean
1
2
3
4
5
6
Social
Health &
Fitness
Vertigo
Aesthetic
Catharsis
Ascetic

Figure Caption

Figure 4. Interaction of subdomain by gender.